

# Notice of Allowability

Application No.

10/608,377

Examiner

Carol S. Tsai

Applicant(s)

MINAMI ET AL.

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/9/2005.
2. ☒ The allowed claim(s) is/are 1-3 and 5-13, now renumbered as 1-12.
3. ☒ The drawings filed on 09 March 2005 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## **DETAILED ACTION**

### *Allowable Subject Matter*

1. Claims 1-3 and 5-13 are allowed.
2. The following is an examiner's statement of reasons for allowance:

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose a digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein

Art Unit: 2857

data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control device, and said process bus communication unit have a storage section that stores data and that is allocated to a storage space of a bus coupling at least said parts to each other, and data exchange between at least said parts is conducted in such a manner that data is transferred to the storage section based on the allocation; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose a digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control

Art Unit: 2857

unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach data exchange among at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit is based on a single master mode; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor

Art Unit: 2857

data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach said protection/control unit executing a protective relay arithmetic operation based on a reference signal for protective relay arithmetic operation whose period is substantially integer times a period of a sampling signal used by said sensor unit(s) for sampling detection of the AC electricity quantities; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component

Art Unit: 2857

monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach said protection/control unit transmits said control signal with a predetermined period synchronized with a processing period of protecting or controlling in said protection /control unit to said component control device, and said component control device monitors status event of said substation main equipment by a sampling synchronized with a timing at which said component control device receives the control signal; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits

Art Unit: 2857

of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach an input / output unit for component control devices which is not adaptable to the digitization of a transmission medium, configured to transmit to said protection / control unit component monitor data outputted from one component control device or a plurality of component control devices controlling aid substation main equipment and to output the control signal outputted from said protection/control unit to said component control device (s), and has a mechanical or static relay section configured to ON/OFF output the control signal to said component control

Art Unit: 2857

and an insulated input section configured to ON/OFF input said data input thereto from said component control device; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control



Art Unit: 2857

unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach Said digital protection and control device being coupled to an external input/output device by a transmission medium, and exchange data with said component control device via said input/output device, the input/output device including a mechanical or static relay section ON/OFF outputting the control command to said component control device and an insulated input section ON/OFF inputting thereto data input from said component control device; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit

Art Unit: 2857

from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach at least a part of a transmission path of said digital protection and control device is constituted of an optical transmission portion, said digital protection and control device further comprising: a fan unit configured to send an air to said optical transmission portion under a predetermined condition; and including all of the other limitations in the respective independent claims.

U. S. Publication 2002/0116092 to Hamamatsu et al. is the reference closest to the claimed invention. Hamamatsu et al. disclose digital protection/control device, comprising: a digital data merging unit configured to take in, via a transmission medium, digital output from one sensor unit or a plurality of sensor units detecting AC electricity quantities of main circuits of substation main equipment and to merge the inputted digital data; a protection/control unit configured to output a control signal for protection/control of said substation main equipment based on the digital data outputted from said digital data merging unit; a communication unit for component control devices configured to transmit to said protection/control unit component monitor data outputted from one component control device or a plurality of component control devices controlling said substation main equipment, and to transmit the control signal outputted from said protection/control unit to said component control device(s), the component monitor data and the control signal being transmitted via a transmission medium; a process bus

Art Unit: 2857

communication unit configured to relay data to/from at least a part of said protection/control unit, said communication unit for component control devices, and said digital data merging unit from/to an external process bus; and a parallel transmission medium configured to couple at least parts of said digital data merging unit, said protection/control unit, said communication unit for component control devices, and said process bus communication unit to one another, wherein data exchange among at least parts of said digital data merging unit, said protection and control unit, said communication unit for component control devices, and said process bus communication unit is based on a multimaster mode. However, Hamamatsu et al. do not teach the control signal to said component control device from said digital protection and control device is a command constituted of a plurality of bits and constituted based on a predetermined rule, and said component control device receiving the command detects an error in the command; and including all of the other limitations in the respective independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Contact Information*

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S.

Art Unit: 2857

Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

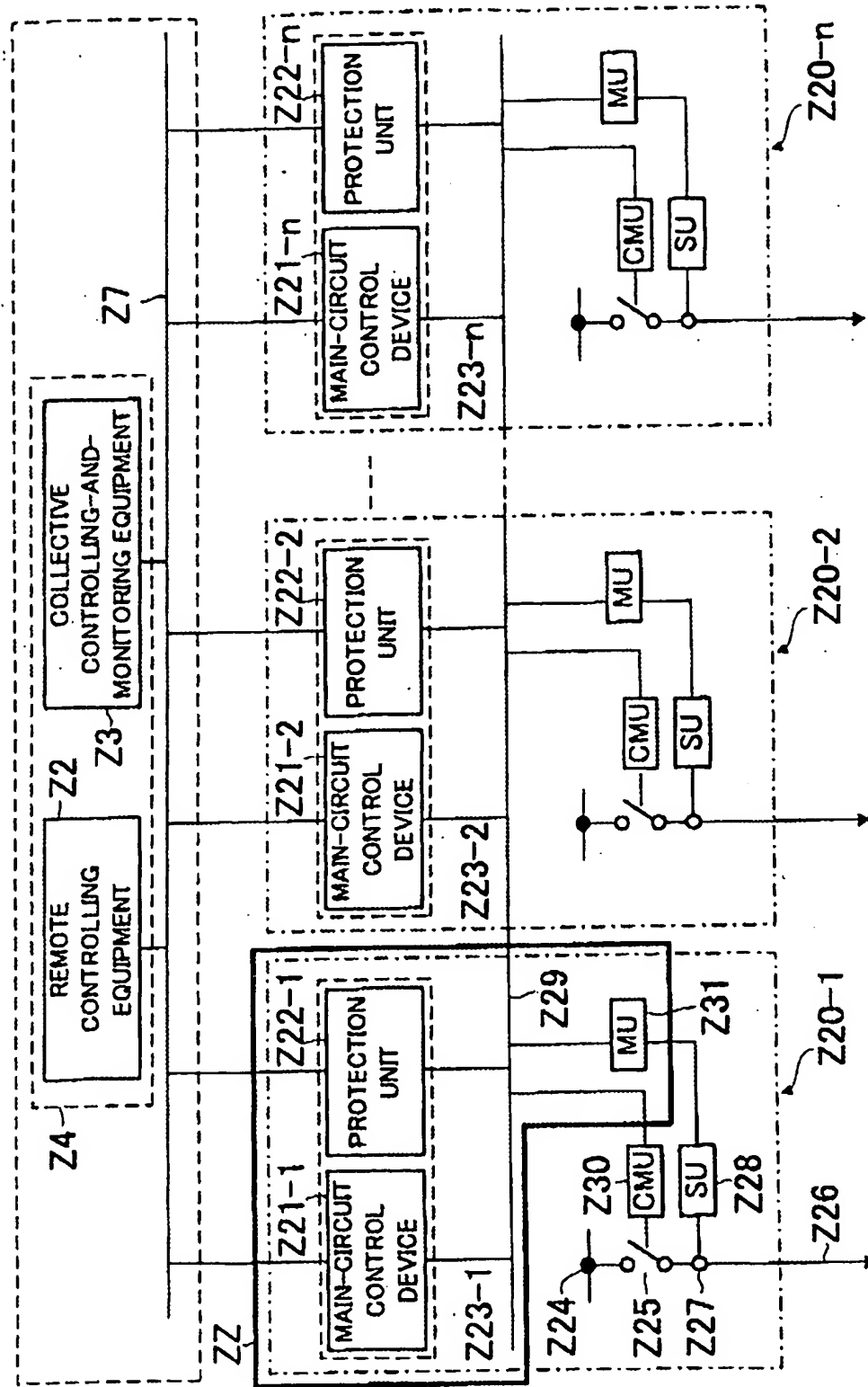
In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.



Carol S. W. Tsai  
Primary Examiner  
Art Unit 2857

04/21/05

FIG. 2



Approved  
CS  
4/20/05

**OBLON, SPIVAK, et al**  
**Docket No: 239622US2**  
**Inventor: Yuuji MINAMI, et al.**  
**Serial No: 10/608,377**  
**Reply to OA of December 9, 2004**  
**Replacement Sheet**

12

